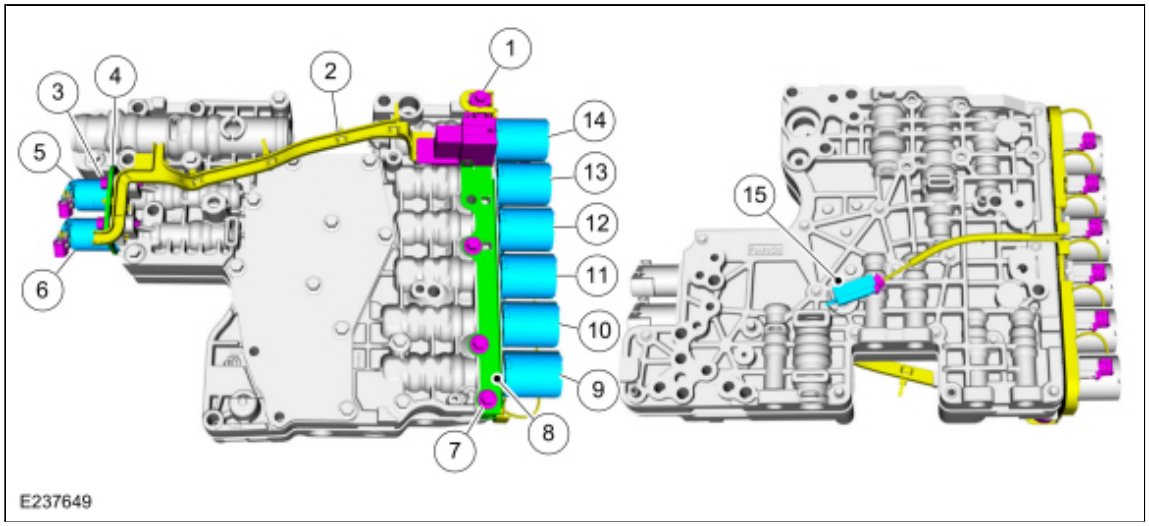
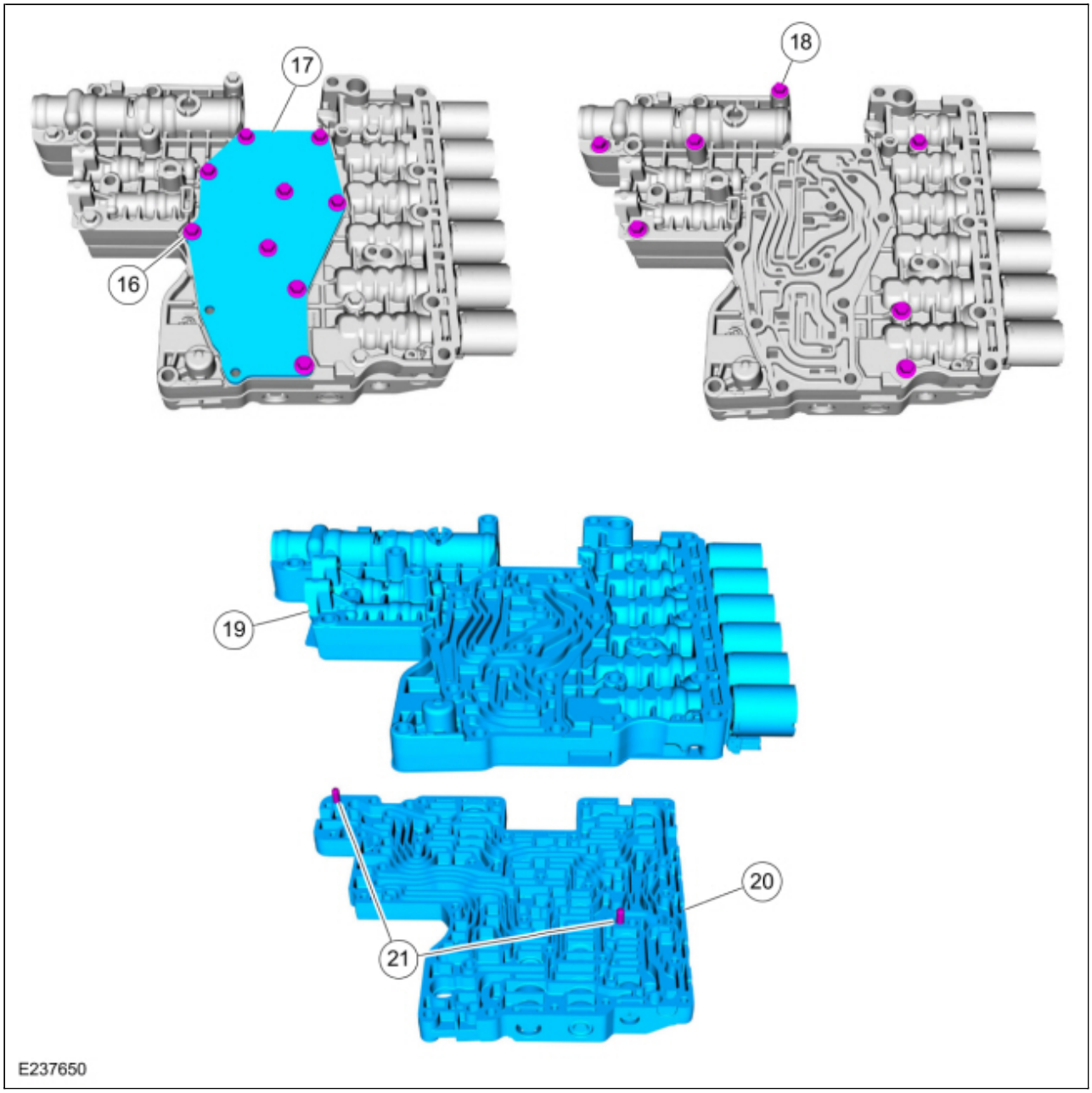
Main Control Valve Body

Base Part Number: 7A100

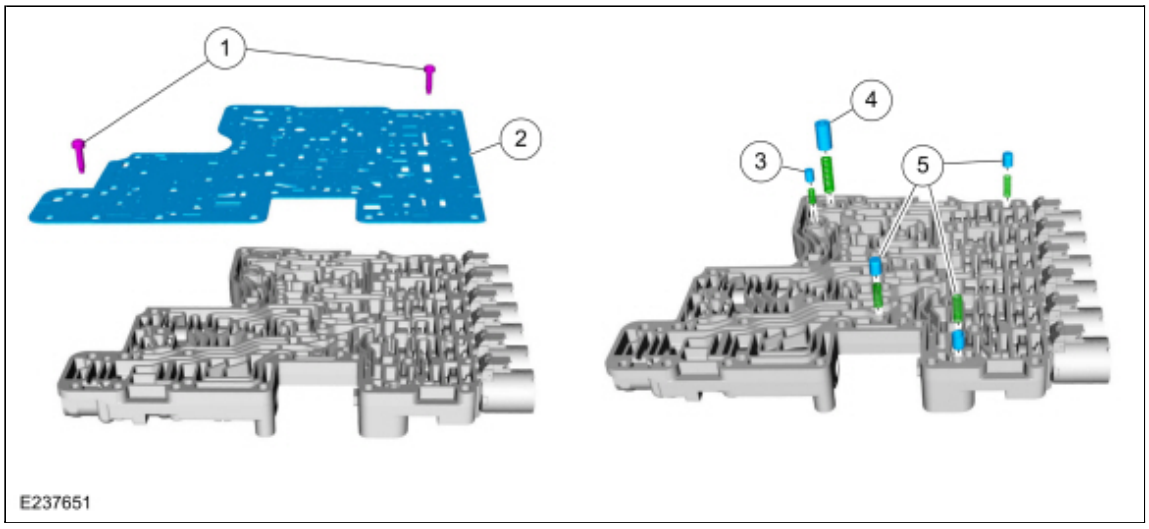


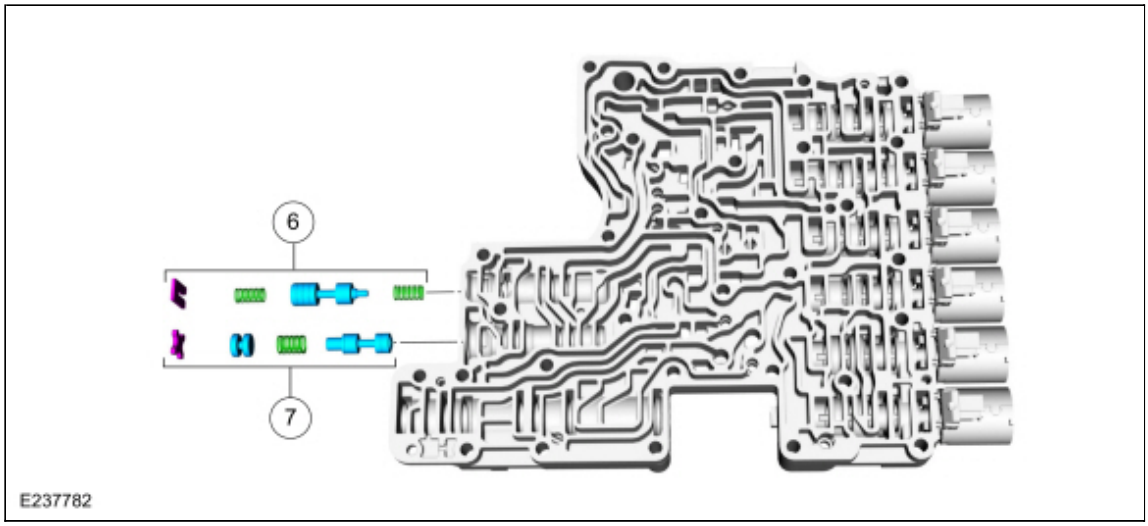


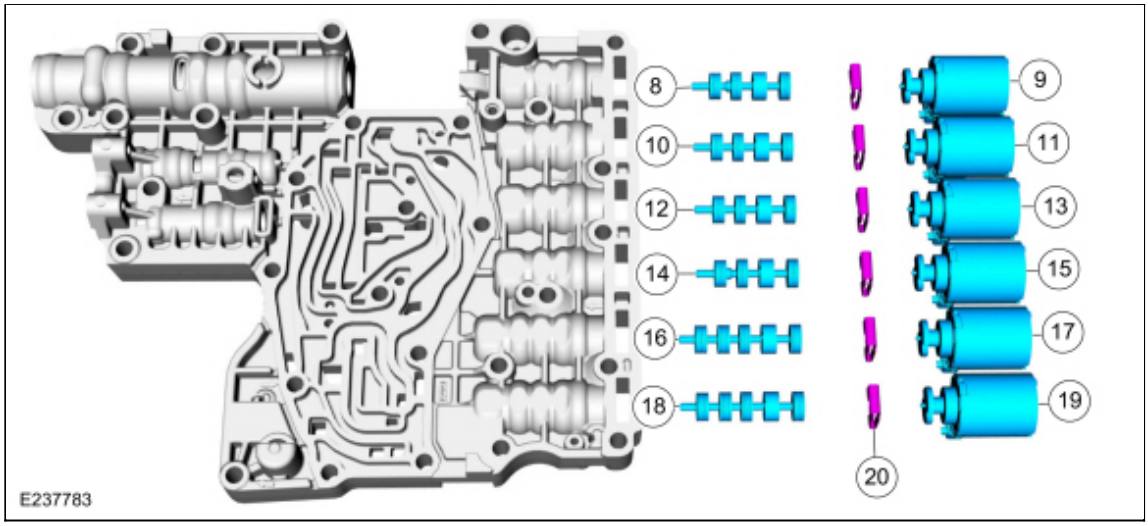
Item	Description
1	Internal wiring harness retaining bolt
2	Internal wiring harness
3	Solenoid retaining plate bolts
4	Solenoid retaining plate
5	TCC solenoid
6	LPC solenoid
7	Shift solenoid retaining plate bolts
8	Shift solenoid retaining plate

9	SSD
10	SSE
11	SSB
12	SSC
13	SSF
14	SSA
15	TFT
16	Valve channel plate bolts
17	Valve channel plate
18	Lower-to-upper valve body bolts
19	Lower valve body
20	Upper valve body
21	Valve body dowel pins

Lower Valve Body



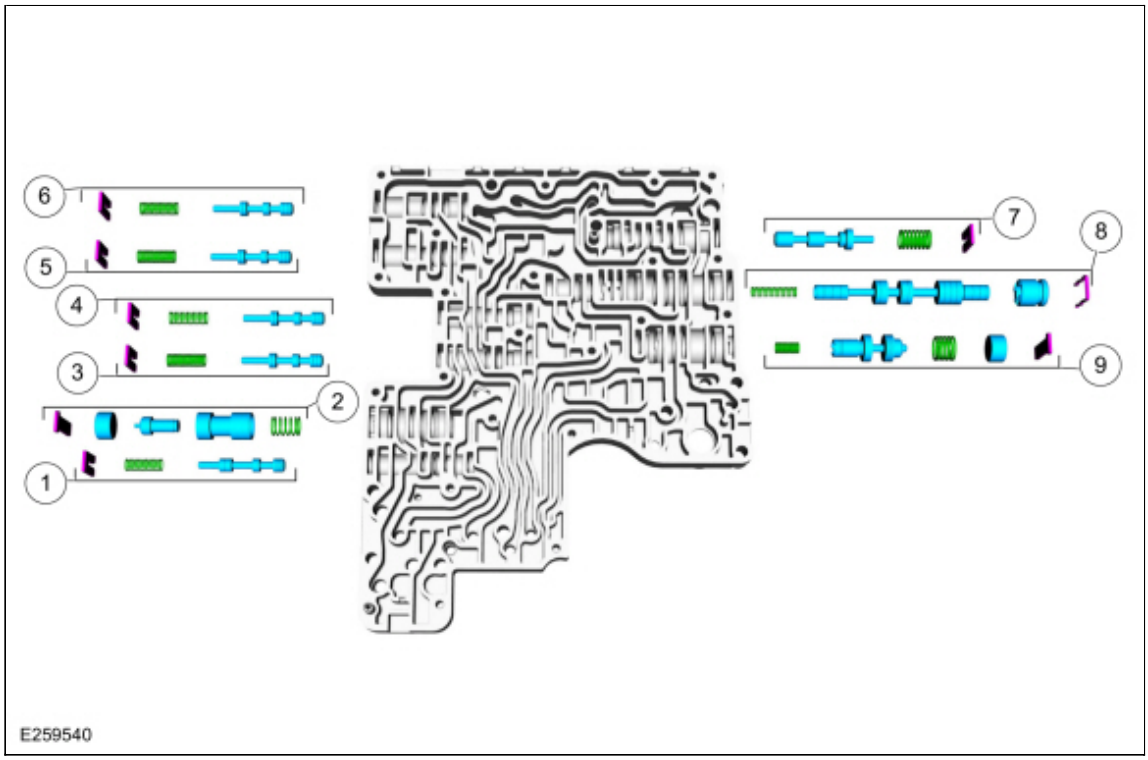




1	Valve body separator plate bolts
2	Valve body separator plate
3	TCC damper assembly
4	LPC damper assembly
5	Check valve assemblies
6	LPC anti-backflow valve assembly
7	TCC priority valve assembly
8	A clutch control valve
9	SSA
10	F clutch control valve
11	SSF
12	C clutch control valve
13	SSC
14	B clutch control valve

15	SSB
16	E clutch control valve
17	SSE
18	D clutch control valve
19	SSD
20	Shift solenoid retainers

Upper Valve Body



1	Lube control valve assembly
2	Cooler thermal bypass valve assembly
3	C clutch latch valve assembly
4	B clutch latch valve assembly
5	F clutch latch valve assembly
6	A clutch latch valve assembly
7	Clutch gain control valve assembly
8	TCC regulator valve assembly
9	Main regulator valve assembly

The main control consists of a upper and lower valve body with solenoids that are controlled by a TCM. The TCM operates the electrical components to provide refined engagement feel, shift feel, and shift scheduling.

Clutch Control Valves

The A, B, C, and F clutch control valves are used to regulate line pressure for smooth clutch application. The clutch control valve design includes a slightly smaller land at the right end of the valve. The adjacent different diameter lands creates a differential chamber. Fluid under pressure in this chamber will apply more force to the larger diameter land than to the smaller diameter land.

- The clutch control valve moves to open or close a passage between line pressure and the clutch control circuit. With the valve at the left of the bore, the passage between line pressure and X clutch control is restricted (closed) and the clutch is released. With the valve at the right of the bore, the passage between line pressure and X clutch control is not restricted (open) and the clutch is applied.
- The clutch control valve is positioned in the bore by balancing two opposing forces. On the left side of the valve is the shift solenoid that pushes the valve to the right and thereby opening the passage and increasing pressure in the clutch control circuit.
- Clutch control pressure in the differential chamber applies more force to the land on the left pushing the valve towards the solenoid and thereby lowering pressure in the clutch control circuit.
- When the shift solenoid is de-energized, the weight of the fluid in the elevated exhaust circuit acts on the clutch control valve to keep it positioned against the solenoid pintle. The passage from line pressure to X clutch control is closed.
- To apply the clutch, the TCM applies current to the shift solenoid and hydraulic pressure in the X clutch control circuit increases proportionally.
- As the solenoid force increases, the clutch control valve moves and connects line pressure to X clutch control.
- X clutch control fluid begins to fill the clutch. X clutch control also acts on the clutch control valve via the differential chamber.
- The clutch control valve cycles rapidly as the X clutch control pressure increases and the clutch applies.

The D and E clutch control valves are used to regulate line pressure for smooth clutch application. The clutch control valve design is similar to the A, B, C, and F clutch control valves, except there are 2 progressively smaller diameter lands at the right end of the valve. The different diameter lands create two differential chambers. Valve operation is identical to the other clutch control valves except the D and E clutch control valve can use 2 different forces to balance the valve against the solenoid. Under low load conditions, the X clutch control circuit feeds both differential chambers resulting more force acting against the solenoid. The clutch control valve is positioned relatively close to the solenoid and about 100 PSI of regulated line pressure applies or holds the clutch. Under high load conditions, the X clutch control circuit feeds only 1 differential chamber resulting less force acting against the solenoid. The clutch control valve is positioned relatively further away from the solenoid and about 200 PSI of regulated line pressure applies or holds the clutch